UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,709	02/21/2002	Kenji Nishinakagawa	1248-0577P-SP	6234

2292 7590 01/12/2005

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
TRAN, TUAN A	

ART UNIT	PAPER NUMBER
2682	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/078,709	NISHINAKAGAWA, KENJI	
	Examiner	Art Unit	
	Tuan A Tran	2682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *09/16/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardenfors et al. (6,633,5500 in view of Cahill (5,287,556).

Regarding claims 1-2, Gardenfors discloses a transceiver circuit (See fig. 4) comprising: a band pass filter 120 which extracts a desired frequency component from a receiving signal; and a low pass filter 124 which removes an unnecessary frequency component from a transmitting signal, wherein the low pass filter is provided in a chip in which the band pass filter is provided (See fig. 4 and col. 1 lines 43-55, col. 6 lines 17-47). However, Gardenfors does not mention that the band pass filter has a first adjusting means (variable band pass filter) and the low pass filter has a second adjusting means (variable low pass filter), for adjusting band pass characteristic and cut-off frequency respectively in response to frequency adjustment signal of an adjustment signal generating means (filter controller). Since transceiver circuit, comprising variable filters wherein their characteristics (bandwidths or cut-off frequencies, or Q points) controlled by filter controllers, is common in the art as suggested by Cahill (See figs. 1, 3, 5 and Abstract, col. 2 lines 1-11, col. 2 line 32 to col.

3 line 4, col. 4 line 65 to col. 5 line 25); therefore it would have been obvious to one of ordinary skill in the art to reconfigured the transceiver circuit as disclosed by Gardenfors with variable band pass and low pass filter controlled by a controller for the advantage of enhancing the signal quality.

Regarding claim 2, Gardenfors & Cahill disclose as cited in claim 1. Gardenfors further discloses a radio frequency signal transmitted and received is in a 2.4 GHz and is a signal, which uses a spread spectrum technology by frequency spreading (See col. 2 lines 17-65).

2. Claims 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardenfors et al. (6,633,550) in view of Cahill (5,287,556) as applied to claims 1 above, and further in view of Saito (6,490,441) and Ichihara (6,466,270).

Regarding claims 3-9, Gardenfors & Cahill discloses as cited in claim 1. Gardenfors further discloses a radio frequency signal transmitted and received is in a 2.4 GHz and is a signal, which uses a spread spectrum technology by frequency spreading (See col. 2 lines 17-65). However, they do not disclose the first adjustment means of the band pass filter (variable filter) and the second adjustment means of the low pass filter (variable low pass filter) comprises: a plurality of impedance elements having equivalent functions, wherein the impedance elements are resistances connected in series between an input and an output terminals or capacitors connected in parallel between an input and output terminals; and switching elements which are switched under control of the frequency adjustment signal (filter controller's signal) so

as to selectively operate the impedance elements, wherein the switching elements short or open terminals of the respective resistors or connected in series with the respective capacitors so as to connect or disconnect the respective capacitors between the input and output terminals. Saito teaches a structure of a variable band pass filter used in a transceiver circuit (See fig. 6) wherein the variable band pass filter comprises: a plurality of impedance elements having equivalent functions, wherein the impedance elements, are variable capacitors connected in parallel between an input and output terminals, inherently includes a switching elements, which are switched under control of the frequency adjustment signal (filter controller's signal) so as to selectively operate the impedance elements, are connected in series with the respective capacitors so as to connect or disconnect the respective capacitors between the input and output terminals (See fig. 6 and col. 5 lines 1-53). Ichihara teaches a structure of a variable low pass filter 23 (See fig. 2) comprising: a plurality of impedance elements having equivalent functions, wherein the impedance elements are resistances R1, R2, R3 connected in series between an input and an output terminals; and switching elements S1 which are switched under control of the frequency adjustment signal (filter controller's signal) so as to selectively operate the impedance elements, wherein the switching elements short or open terminals of the respective resistors (See fig. 2 and col. 5 lines 18-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teachings of Saito & Ichihara in constructing variable band pass and low pass filters of the transceiver circuit as disclosed by Gardenfors & Cahill for the advantage of controlling the characteristics of the variable filters such as

bandwidths, Q points or cut-off frequencies in order to enhance signal reception/transmission.

Response to Arguments

Applicant's arguments filed 08/24/2004 have been fully considered but they are not persuasive.

a. The Applicant argued that neither Gardenfors et al. nor Cahill, taken singly or in combination, disclose or teach the claimed subject matter of claim 1 (See Remark, page 4-5). The Examiner respectfully disagrees with the Applicant's arguments because the only difference between the Gardenfors and the claimed subject matter of claim 1 is Gardenfors' filters (bandpass and lowpass filters) are not controlled variable filters. However, since controlling the filter's characteristics such as bandwidth, or cut-off frequency or Q point is a common technique in the art as disclosed by Cahill; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to reconfigured the transceiver circuit as disclosed by Gardenfors with variable band pass and low pass filter controlled by a controller for the advantage of offsetting any degradation occurred in the filter due to time or temperature that may effects on the filter's characteristic as well as enhancing signal quality reception/transmission (See above rejection for details). For that reasons, the Examiner remains the same rejections for all pending claims.

b. The Applicant argued that increasing a filter bandwidth is not analogous to adjusting filter characteristic (See Remark, page 5). The Examiner respectfully

disagrees with the Applicant's argument because varying (increasing or decreasing) the bandwidth of the filter is adjusting the filter's characteristic. Unless, the Applicant clearly points out what is the claimed limitation "characteristic", otherwise the Examiner considers bandwidth or cut-off or Q point are the filter's characteristics.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan Tran** whose telephone number is **(703) 605-4255**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Vivian Chin**, can be reached at **(703) 308-6739**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Tuan Tran

AU 2682

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600